

BUS-57 – Six Sigma Black Belt (CSSBB) Certificate Program with Externship

Professional Education Course Syllabus

Program includes National Certification & an Externship Opportunity

Course Contact Hours: 48

The Six Sigma Black Belt (CSSBB) Professional

The Six Sigma Professional program is designed for high-performance employees and leaders of business improvement projects. Whether in healthcare, finance, government, manufacturing or any other industry, Six Sigma Black Belt training is ideal for current professionals looking toward advancement in their current position as well as individuals looking to gain employment with any firm that utilizes these concepts and techniques. Experienced professionals who are able to master these techniques and gain certification in Six Sigma Black Belt are in significant demand by employers looking to ensure the most efficient use of their resources.

The Six Sigma Black Belt (CSSBB) Program

Building upon participants' existing knowledge and practice, the Six Sigma Black Belt course will help participants to master advanced statistical analysis tools, identify opportunities with solutions that can be implemented immediately and to deliver measurable results right away in order to increase an organization's return on investment. Participants who complete this course will be able to lead Six Sigma projects meant to enhance the capability of both internal and external processes in order to better meet customer expectations. With the comprehensive understanding of process analysis and improvement individuals gain from Six Sigma Black Belt certification, professionals with these skills makes a significant impact on any organization and be well-positioned for advancement in their chosen fields. The Six Sigma Black Belt course presents an overview of the key concepts for the Certified Six Sigma Black Belt (CSSBB) exam. Students will explore processes and team management, operational metrics, and key tools and techniques to achieve process excellence.

Education and National Certifications

- Students should have or be pursuing a high school diploma or GED.
- There are no state approval and/or state requirements associated with this program.
- There are several National Certification exams that are available to students who successfully complete this program:
 - **American Society for Quality (ASQ) Certified Six Sigma Black Belt (CSSBB) Exam**
 - **NOTE:** Six Sigma Black Belt requires 2 completed projects with signed affidavits **OR** 1 completed project with signed affidavit and 3 years of work experience in one or more areas of the Six Sigma Body of Knowledge.
 - Candidates do NOT need to be a Certified Six Sigma Green Belt.
 - **Microsoft Office Specialist (MOS) Certification Exam.**

Program Objectives

At the conclusion of this program, students will be able to:

- Apply the Lean Six Sigma (LSS) model to create breakthrough in profitability and growth
- Manage projects by defining metrics, following and employing the Define-Measure-Analyze-Improve-Control (DMAIC) methodology
- Design effective teams to execute projects using tools & techniques of Lean Six Sigma
- Implement a sustainable process breakthrough using the DMAIC methodology
- Differentiate DMAIC and Design for Six Sigma (DFSS) frameworks
- Analyze a business process and engender support from executive management for using the tools and techniques relevant to the Lean Six Sigma methodology
- Sustain process breakthrough improvements in the control phase of the LSS initiative
- Use Microsoft Office

National Certification

Upon successful completion of this program, students would be eligible to sit for the American Society for Quality (ASQ) Certified Six Sigma Black Belt (CSSBB) and the Microsoft Office Specialist (MOS) exams. Although there are no state approval, state registration or other state requirements for this program, students who complete this program will be prepared and are eligible to sit for this national certification exam. Students who complete this program are encouraged to complete the externship option with their program. Students who complete this program can and do sit for the MOS national certification exams and are qualified, eligible and prepared to do so.

Externship / Hands on Training / Practicum

Although not a requirement, once students complete the program, they have the ability to participate in an externship and/or hands on practicum so as to practice the skills necessary to perform the job requirements of a professional in this field. Students will be assisted with completing a resume and/or other requirements necessary to work in this field. All students who complete this program are eligible to participate in an externship and will be placed with a participating organization near their location.

Certified Six Sigma Black Belt (CSSBB) Program Detailed Student Objectives:

DEPLOYING LEAN SIX SIGMA

- Describe a Six Sigma business model
- Describe a Lean business model
- Demonstrate how LSS applies in service industries and manufacturing
- Explain how Lean and Six Sigma work together

LEAN SIX SIGMA LEADERSHIP

- Differentiate leadership from management
- Describe the four different styles of leadership
- Distinguish situations when each of the four styles of leadership apply
- Explain the leader's role in motivating people
- Explain the leader's role in a change process

LEAN SIX SIGMA STRATEGIC PLANNING

- Use the skills necessary to create a strategic plan
- Describe the importance of implementing a strategic plan
- Conduct a gap or SWOT analysis

LEAN SIX SIGMA TEAMS

- Describe the roles of Lean Six Sigma team members
- Identify required skills of Lean Six Sigma team members
- Explain how to give and receive appropriate feedback

IMPROVEMENT TO GENERATE PROCESS BREAKTHROUGH

- Describe metrics
- Use process metrics to measure business process performance
- Identify key performance metrics for business processes in a given enterprise
- Explain the six-step benchmarking process

LEAN SIX SIGMA PROJECT PLANS

- Explain how a Lean Six Sigma project is selected
- Use a project proposal to define a Lean Six Sigma project
- Explain how project plans guide Lean Six Sigma projects

KEY LEAN SIX SIGMA CONCEPTS

- Indicate the origins of waste in a process
- Explain the just-in-time system
- Describe how a pull-system supports just-in-time
- Describe how continuous flow processing supports just-in-time
- Calculate task time

LEAN SIX SIGMA WORK OPTIMIZATION

- Describe how line balancing affects work optimization
- Explain how setup time reduction affects work optimization
- Recognize how single piece flow supports work optimization
- Describe the relationship between level scheduling and work optimization
- Explain standardized work
- Describe the role of visual management in work optimization

INTRODUCING LEAN SIX SIGMA DESIGN OF EXPERIMENTS

- Identify the components of experiment design
- Define the terminology for experiment design
- Describe the structure of a design experiment
- Explain analysis of means and analysis of variance

MICROSOFT OFFICE Module

- Use an integrated software package, specifically the applications included in the Microsoft Office suite
- Demonstrate marketable skills for enhanced employment opportunities
- Describe proper computer techniques for designing and producing various types of documents
- Demonstrate the common commands & techniques used in Windows desktop
- List the meaning of basic PC acronyms like MHz, MB, KB, HD and RAM
- Use WordPad and MSWord to create various types of documents
- Create headings and titles with Word Art
- Create and format spreadsheets, including the use of mathematical formulas
- Demonstrate a working knowledge of computer database functions, including putting, processing, querying and outputting data
- Define computer terminology in definition matching quizzes
- Use the Windows Paint program to alter graphics

- Use a presentation application to create a presentation with both text and graphics
- Copy data from one MS Office application to another application in the suite
- Use e-mail and the Internet to send Word and Excel file attachments
- Demonstrate how to use the Windows Taskbar and Windows Tooltips
- Explain how copyright laws pertain to data and graphics posted on the Internet
- Take the college computer competency test after course completion
- Follow oral and written directions and complete assignments when working under time limitations

Fresno Pacific University Student Learning Outcomes (FPU-SLO)

FPU-SLO 1	Student Learning Outcomes Oral Communication: Students will <i>exhibit</i> clear, engaging, and confident oral communication – in both individual and group settings – and will critically <i>evaluate</i> content and delivery components.
FPU-SLO 2	Written Communication: Students will <i>demonstrate</i> proficient written communication by <i>articulating</i> a clear focus, <i>synthesizing</i> arguments, and utilizing standard formats in order to <i>inform</i> and <i>persuade</i> others.
FPU-SLO 3	Content Knowledge: Students will <i>demonstrate</i> comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
FPU-SLO 4	Reflection: Students will <i>reflect</i> on their personal and professional growth and <i>provide evidence</i> of how such reflection is utilized to manage personal and vocational improvement.
FPU-SLO 5	Critical Thinking: Students will <i>apply</i> critical thinking competencies by <i>generating</i> probing questions, <i>recognizing</i> underlying assumptions, <i>interpreting</i> and <i>evaluating</i> relevant information, and <i>applying</i> their understandings to new situations.
FPU-SLO 6	Moral Reasoning: Students will <i>identify</i> and <i>apply</i> moral reasoning and ethical decision-making skills, and <i>articulate</i> the norms and principles underlying a Christian world-view.
FPU-SLO 7	Service: Students will <i>demonstrate</i> service and reconciliation as a way of leadership.
FPU-SLO 8	Cultural and Global Perspective: Students will <i>identify</i> personal, cultural, and global perspectives and will employ these perspectives to <i>evaluate</i> complex systems.
FPU-SLO 9	Quantitative Reasoning: Students will accurately <i>compute</i> calculations and symbolic operations and <i>explain</i> their use in a field of study.
FPU-SLO 10	Information Literacy: Students will <i>identify</i> information needed in order to fully understand a topic or task, <i>explain</i> how that information is organized, <i>identify</i> the best sources of information for a given enquiry, <i>locate</i> and critically <i>evaluate</i> sources, and accurately and effectively <i>share</i> that information.

Continuing Education Student Learning Outcomes (CE-SLO)

CE-SLO 1	Demonstrate proficient written communication by articulating a clear focus, synthesizing arguments, and utilizing standard formats in order to inform and persuade others, and present information applicable to targeted use.
CE-SLO 2	Demonstrate comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.

CE-SLO 3	Reflect on their personal and professional growth and provide evidence of how such reflection is utilized to manage personal and professional improvement.
CE-SLO 4	Apply critical thinking competencies by generating probing questions, recognizing underlying assumptions, interpreting and evaluating relevant information, and applying their understandings to the professional setting.
CE-SLO 5	Reflect on values that inspire high standards of professional and ethical behavior as they pursue excellence in applying new learning to their chosen field.
CE-SLO 6	Identify information needed in order to fully understand a topic or task, organize that information, identify the best sources of information for a given enquiry, locate and critically evaluate sources, and accurately and effectively share that information.